[P700] Comparison of biofilms formed by clinical oral isolates of non-***Candida albicans Candida*** species

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Objectives: Oral candidiasis is a significant problem in patients undergoing treatment for cancer or organ transplantation. Furthermore it is one of the most common and persistent conditions encountered in individuals with human immunodeficiency virus infection and acquired immunodeficiency syndrome. Many Non-*Candida albicans Candida* (NCAC) species, such as *Candida glabrata*, *Candida parapsilosis* and *Candida tropicalis* have recently emerged as significant pathogens of clinical importance. Biofilms have clinical significance as they exhibit high resistance to host defences and antimicrobial agents, therefore representing a persistent source of infectious organisms. Thus, the aim of this study was to compare biofilms formed by different oral isolates of NCAC species.
Methods: A total of 6 strains were isolated from oral tract, including *C. parapsilosis* (n = 2), *C. glabrata* (n = 2) and *C. tropicalis* (n = 2). References strains of each species (*C. glabrata* ATCC 2001, *C. tropicalis* ATCC 750 and *C. parapsilosis* ATCC 22019) were also assayed. Biofilms were analysed after 48 hours through total biomass quantification by crystal violet staining. The ultrastructure of the NCAC species biofilms was observed by Scanning Electron Microscopy. Matrix material was extracted from biofilms and their protein and total carbohydrate contents were determined by the Lowry and Dubois methods, respectively.
Results: The results showed that all NCAC species were able to form biofilms, although there were differences among species and strains. However, *C. glabrata* strains are less capable to form biofilm compared with the other species. *Candida parapsilosis* and *C. tropicalis* strains revealed a multilayer biofilm structure that consists of a dense network of yeast, hyphae and pseudohyphae. On the other hand, *C. glabrata* strains revealed a dense and compact multilayer biofilm structure intimately packed with yeasts without of either pseudohyphae or hyphae. Matrix isolated from *C. parapsilosis* biofilms consisted of higher amounts of carbohydrates but small amounts of proteins. In contrast, matrix from *C. tropicalis* strains consists mainly of proteins, with smaller amounts of carbohydrates. Matrix from *C. glabrata* strains consisted of lower amounts of proteins and carbohydrates.
Conclusions: As a general conclusion, it was possible to infer that clinical oral isolates of NCAC species present different behaviours in terms of biofilm formation, structure and chemical composition.

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